

WHAT IS CLAIMED IS:

1. A system comprising:
one or more probes configured to be positioned inside a heart of a patient;
5 a processor communicatively coupled to the one or more probes, the processor being used to process electrical information pertaining to the heart, the electrical information being sensed using the one or more probes;
a display communicatively coupled to the processor, the display being used to display an image of the heart;
10 image processing tools which are used by the processor to manipulate the image.
2. The system of claim 1, wherein the image is acquired using a computed tomography imaging system, a magnetic resonance imaging system, an ultrasound imaging system and/or a positron emission tomography imaging system.
- 15 3. The system of claim 1, wherein the processor is used to process position information which pertains to the position of at least one of the one or more probes positioned in the heart.
4. The system of claim 3, wherein the position information is used to create a structural map of the heart.
- 20 5. The system of claim 1, wherein the image processing tools include at least one of a volume rendering tool, a virtual endoscope tool, a coronary vessel analysis tool, an image reconstruction tool, and an image segmentation tool.
6. The system of claim 1, wherein the image is acquired prior to the probe being positioned in the heart.
- 25 7. The system of claim 1, wherein the image is constructed based on a plurality of image slices each of which represents a cross sectional slice of the heart,

and wherein the image processing tools are used to manipulate the image by manipulating the plurality of image slices.

8. A computer based system comprising: /
electrophysiology monitoring logic which is used to monitor and
5 control one or more probes positioned inside a heart; the one or more probes being
used to sense electrical information pertaining to the heart;
mapping logic which is used create a structural map of the heart by
determining the position of at least one of the one or more probes inside the heart; and
image processing logic which is used to manipulate an image of the
10 heart.

9. The system of claim 8, wherein the image is a computed tomography image, magnetic resonance image, ultrasound image and/or positron emission tomography image.

10. The system of claim 8, wherein the image processing logic includes at
15 least one of the following types of logic: volume rendering logic, virtual endoscope logic, image reconstruction logic, and image segmentation logic.

11. The system of claim 8, further comprising reporting logic which is used to create a report which includes the electrical information and the image.

12. The system of claim 8, wherein the electrophysiology monitoring logic
20 comprises pacing logic which is used to pace the heart.

13. The system of claim 8, wherein the image is a three dimensional image.

14. A system comprising: /
one or more probes configured to be positioned inside a heart, at least
25 one of the one or more probes being used to sense electrical information pertaining to the heart;

a data processing system communicatively coupled together and communicatively coupled to the one or more probes, the data processing system being configured to store position information pertaining to a position of at least one of the one or more probes, the data processing system also being configured to store an
5 image of the heart and image processing tools;

wherein the image processing tools are used to manipulate the image.

15. The system of claim 14, wherein the image is acquired using a computed tomography imaging system, a magnetic resonance imaging system, an ultrasound imaging system and/or a positron emission tomography imaging system.

10 16. The system of claim 14, wherein the data processing system uses the position information to create a structural map of the heart.

17. The system of claim 14, wherein the image processing tools include at least one of a volume rendering tool, a virtual endoscope tool, an image reconstruction tool, and an image segmentation tool.

15 18. The system of claim 14, wherein the image is a three dimensional image.

19. A combination system comprising:
an electrophysiology monitoring system which is configured to be communicatively coupled to one or more probes positioned inside a heart, the one or
20 more probes being configured to sense electrical information pertaining to the heart;
an electrophysiology three-dimensional mapping system which is configured to receive position information pertaining to the position of the one or more probes, the position information being used to create a three-dimensional structural map of the heart, the electrophysiology monitoring system and the
25 electrophysiology three-dimensional mapping system being communicatively coupled together;
image processing logic which is used to manipulate an image of the heart.

20. The system of claim 19, wherein the image processing logic includes at least one of the following types of logic: volume rendering logic, virtual endoscope logic, image reconstruction logic, and an image segmentation tool.

21. The system of claim 19, wherein the image is a computed tomography image, magnetic resonance image, ultrasound image and/or positron emission tomography image.

22. The system of claim 19, wherein the combination system is configured to generate a report which includes the image.

23. A system comprising:
one or more probes configured to be positioned inside a heart of a patient;
a processor communicatively coupled to the one or more probes, the processor being used to process electrical information pertaining to the heart, the electrical information being sensed using the one or more probes;
image processing tools in the form of computer readable instructions, the image processing tools being used to manipulate an image of a heart, the image being constructed based on a plurality of image slices each of which represents a cross sectional slice of the heart;
a user interface communicatively coupled to the processor, the user interface being configured to display the image.